

## *Tosanoides flavofasciatus*, a New Anthiine Fish from Sagami Bay, Japan, and the Tonga Ridge, Melanesia

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(Received March 7, 1979)

**Abstract** *Tosanoides flavofasciatus* is described as a new species in the family Serranidae, subfamily Anthiinae. This new fish was found in Sagami Bay and the Tonga Ridge. It is the second species of the genus *Tosanoides* and closely related to *T. filamentosus* Kamohara, from which it differs in having a short first dorsal spine and short filamentous pelvic fin rays, as well as in coloration.

Masuda and Abe (1972) and Masuda et al. (1975) published color photographs of unidentified anthiine specimens. There have been no detailed description and no confirmative taxonomical identification of these specimens. Recently, two specimens which are identical with the photographed specimens were captured off Izu-Oshima and one from the Tonga Ridge. They are closely related to *Tosanoides filamentosus* Kamohara (1953) in the shape of the head and body, meristic characters, and serration of the upper limb of the preopercle, but are different in having a short first dorsal spine and short pelvic fins as well as in coloration. This species seems best to be assigned to the genus *Tosanoides* and is described here as a new species, *T. flavofasciatus*.

### *Tosanoides* Kamohara, 1953

(Japanese name: Itohiki-hanadai-zoku)

Type species: *Tosanoides filamentosus* Kamohara, 1953, by original designation and monotypy.

Since the present new species is added to *Tosanoides*, the diagnosis of this formerly monotypic genus should be emended as follows: dorsal fin rays X, 17; anal fin rays III, 8; length of first dorsal spine about equal to or much longer than eye diameter; pectoral fin longer than head length and its rays 13, not branched; caudal crescentic, branched rays 13; pored lateral line scales 31~32; gill rakers 8~10+24~26=34~35; predorsal bones 3; upper limb of preopercle finely serrated; lateral line forming an angle below last

several dorsal rays.

Among the anthiine genera, *Tosanoides*, *Serranocirrhitis* Watanabe, 1949 (cf. Randall and Heemstra, 1978) and *Dactylanthias* Bleeker, 1873, have all the following characters in common: an oblong body, all pectoral rays unbranched, crescentic caudal fin, lateral line with an angle below last several rays, and fine serrations of upper limb of preopercle. *Tosanoides* differs from *Serranocirrhitis* in having a longer first dorsal, a lower body, and a smaller number of soft dorsal rays (17 instead of 18~20), and differs from *Dactylanthias* in having a longer first dorsal spine, no projecting lower jaw, and a small number of pectoral fin rays (13 instead of 18). This genus is also related to *Tosana* Smith et Pope, 1906, but differs from it in having a longer first dorsal spine, a higher body, long pectoral fins with all rays unbranched (short pectoral fin, median rays unbranched), and three predorsal bones (two). Further comparative studies must be made to establish their generic distinction.

### *Tosanoides flavofasciatus*, sp. nov.

(Japanese name: Kishima-hanadai)

(Figs. 1~3)

A kind of barber-fish. Masuda and Abe, 1972: 199, pl. 159 (Ito, Izu Pen., 34°54'N, 139°10'E, depth 55 m. Color photograph. Japanese name: Kishimahanadai).

Anthiinae sp. Masuda, Araga and Yoshino, 1975: 220, pl. p. 51-E (Ito, Izu Pen., depth 40 m. Color photograph).

Holotype: ZUMT 54241 (Department of

Zoology, University Museum, University of Tokyo), 84 mm in standard length (SL), male, collected by H. Masuda on Jan. 24, 1979, at a depth of 50 m, off Izu-Oshima (34°47'N, 139°24'E).

Paratypes: Katayama's Cat. No. K5744, 64 mm SL, female, collected together with the holotype; FSFL (Far Seas Fisheries Research Laboratory, Shimizu) EE814, 46.2 mm SL, collected by the R/V Kaiyo-maru, bottom trawler of the Japanese Fishery Agency, at a depth of 150~157 m, from Tonga Ridge (22°54.8'S, 175°42.2'E), Jan. 13, 1976.

**Diagnosis.** This new species differs from *Tosanoides filamentosus* Kamohara (characters are in parentheses) in the following points: (1) third or fourth dorsal spine longest (first dorsal spine longest); (2) pelvic fin rays not so elongated, the longest second ray shorter than head (much elongated, longer than head); (3) color of male in life: body pink with four horizontal yellow stripes; dorsal, anal and pelvic fins and lower lobe of caudal fin with a yellow stripe; in female: body reddish orange; each scale with a yellow spot and a yellow oblique stripe from tip of snout to upper pectoral base; anal fin with a broad yellow stripe (color of male in life unknown; in female: body reddish orange; each scale with a yellow spot; a yellow stripe from tip of snout to opercle and a yellow blotch on nape; anal fin without a broad yellow stripe).

**Description.** In the following description, data of paratypes, when different from those of the holotype, are given in parentheses. Dorsal fin rays X, 17; anal fin rays III, 8; pectoral fin rays 13, not branched; pelvic fin rays I, 5; branched caudal rays 13; pored lateral line scales 32(31); gill rakers on right first arch  $10+25=35$  ( $10+25=35$  and  $8+26=34$ ); vertebrae ( $10+16$ ; predorsal bones 3 in K5744).

Body ovoid, compressed, greatest body depth 2.55 (2.29 and 2.69) in SL; width just behind gill opening 4.94 (4.92 and 5.31) in SL; dorsal and ventral profiles of head gently and evenly curved; head length 3.00 (2.91 and 2.69) in SL; diameter of orbit 3.73 (3.01 and 3.07) in head; snout short, 4.00 (5.24 and 4.91) in head; interorbital space very convex, 3.89 (3.67 and 3.58) in head; length

of caudal peduncle 1.93 (1.57 and 1.91) in head, the least depth 2.95 (2.59 and 2.87).

Mouth large, oblique and protracile; lower jaw not projecting beyond the upper when mouth is closed; upper jaw length 2.00 (2.20 and 2.05) in head; maxilla expanded distally, reaching below posterior border of pupil; supra-maxilla absent. Nostrils two, close together, directly in front of eye; anterior nostril in a membranous tube, with an elevated posterior edge; posterior nostril with a slight rim anteriorly. Upper jaw with a band of villiform teeth which is broader anteriorly; a pair of canines on each side of tip of upper jaw and posteriorly another pair of canines directed backward; an outer row of slender canines (about 10 in holotype) on side of jaw, more posterior ones inclined forward; lower jaw with a patch of villiform teeth anteriorly; a pair of canines on tip of lower jaw and posteriorly a canine on each side; a row of slender canines (about 15 in holotype) like those of outer row of upper jaw on side of jaw; posterior ones pointing forward; small teeth on vomer and palatines; teeth on vomer in a triangular band; tongue pointed, smooth. Preopercle with a round angle, upper limb finely serrated, the lower smooth; opercle with three flat spines, middle one longest; subopercle and interopercle slightly serrated. Gill rakers long and numerous; longest raker much longer than gill filament, 1.53 (1.97 and 2.00) in eye diameter; longest gill filament 2.34 (2.92 and 2.80).

Dorsal fin unnotched, inserted slightly posterior to upper end of gill opening; first dorsal spine 3.89 (3.79 in K5744), second dorsal spine 3.59 (3.33 in K5744) in head; fourth dorsal spine longest, its length 2.55 (2.75 in K5744) in head, (in EE814 the third spine longest, 2.87 in head); length of last dorsal spine 3.11 (3.14 and 3.44), longest dorsal soft ray (7th) 2.33 (2.75 and 2.44) in head. Anal fin originating below base of second dorsal soft ray; second anal spine slightly stronger and longer than the third; length of first anal spine 5.09 (5.50 and 5.55), second anal spine 2.55 (2.44 and 2.57), third anal spine 2.80 (2.75 and 2.65) in head; posterior margin of anal fin rounded; length of longest anal soft ray (5th) 1.87 (1.83 and 1.50) in head; some

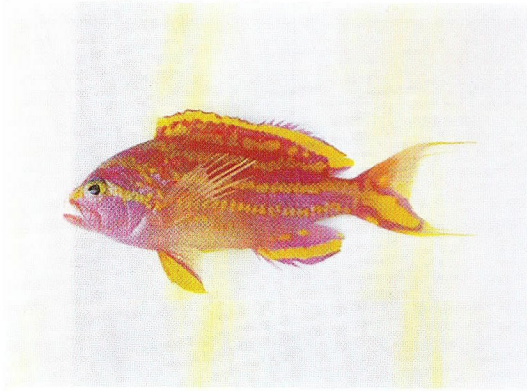


Fig. 1. *Tosanoides flavofasciatus*, sp. nov.  
Holotype, ZUMT 54241, 84 mm SL,  
male.



Fig. 2. *Tosanoides flavofasciatus*, sp. nov.  
A paratype, Katayama's Cat. No.  
K5744, 64 mm SL, female.

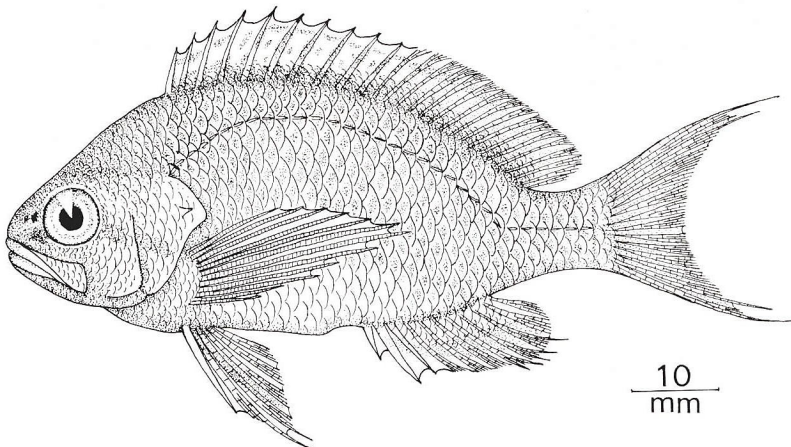
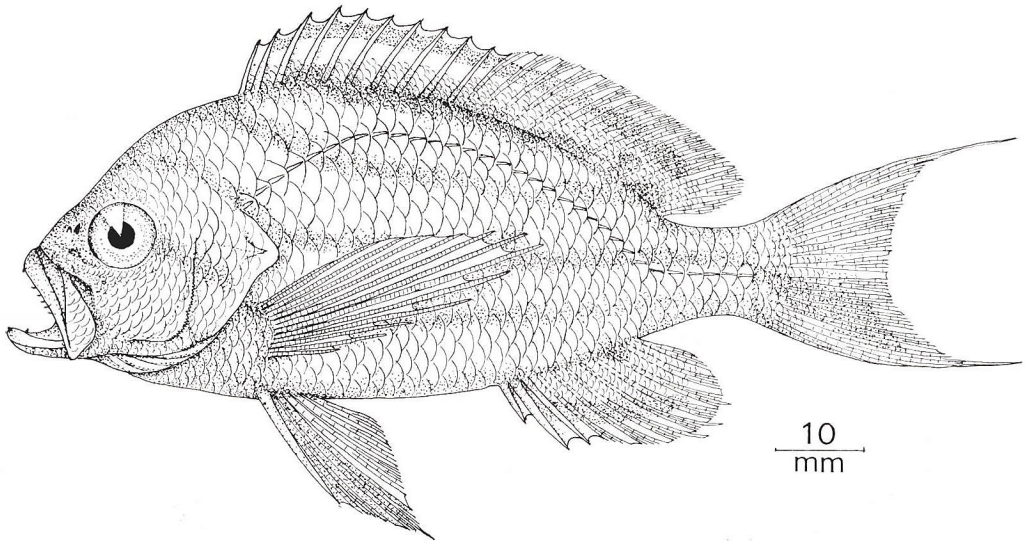


Fig. 3. *Tosanoides flavofasciatus*, sp. nov. Holotype (top) and paratype (bottom), specimen data as  
in Figs. 1 and 2.

soft rays slightly filamentous. Pectoral fins subsymmetrical, longer than head, reaching a vertical at base of third anal ray, their length 2.71 (2.56 and 2.36) in SL. Pelvic fins inserted slightly anterior to lower end of pectoral fin bases, reaching origin of anal fin, their length 3.23 (3.46 and 3.19) in SL. Caudal crescentic, the lobes filamentous.

Scales rather large, ctenoid; 3 in a series from origin of dorsal to lateral line, 2 from middle of spinous dorsal to lateral line and 13 from origin of anal to lateral line; head closely scaled except for lips and tip of snout anterior to nostrils; dorsal and anal fins covered with small scales basally; scales on median fins reaching nearly half way to outer margin. Lateral line high, concurrent with back, forming an angle below last several dorsal rays and extending along middle of caudal peduncle to base of caudal fin.

Color in life: This species is sexually dichromatic. In male (holotype): body pink, with four yellow horizontal stripes; a dorsal stripe begins on base of fourth dorsal spine and extends to base of fifth dorsal ray; second stripe begins on nape just in front of dorsal fin, crosses lateral line and extends to base of posterior part of dorsal fin; third stripe begins on nape between tip of snout and dorsal origin, passes above upper border of opercle and extends to caudal base above lateral line where it bends ventrally to join the ventral yellow stripe on lower lobe of caudal fin; ventral stripe passes from tip of snout, through middle of eye across cheek and operculum, over upper part of pectoral fin base and beneath pectoral fin, straight back on lower body to ventrolateral portion of caudal peduncle; an oval red spot slightly behind upper border of opercle; dorsal and anal fins pink, with a broad yellow stripe; pectoral fins pale; pelvic fins pink, with a broad yellow stripe anteriorly.

In female: body reddish orange; each scale on side of body (except ventrally) with a vertically elongate yellow spot; a yellow oblique stripe from tip of snout passes through eye to upper pectoral base; dorsal fin red with round or oblong yellow spots; posterior part of soft dorsal yellowish; anal fin pink with a broad yellow stripe near margin;

upper lobe of caudal fin pale red, lower lobe yellowish; pelvic fins pink, with a broad yellow stripe; pectoral fins pink.

**Distribution.** Sagami Bay at Izu-Oshima and off Ito (observed and photographed); Tonga Ridge, Melanesia.

#### Acknowledgments

We are grateful to Dr. Yoshiaki Tominaga, University of Tokyo, for his comments on the manuscript. Heartfelt thanks are also due to Dr. Tetsuya Sato of the Far Seas Fisheries Research Laboratory and Mr. Eiichi Fujii for the loan of the Tonga Ridge specimen.

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相模湾およびトンガ海嶺水域から得られた新種キシマハナダイ

片山正夫・益田 一

益田・阿部 (1972) は種不明のハナダイの生態写真 (pl. 159) を載せ、この魚にキシマハナダイの和名を与えた。更に益田ら (1975) にもキシマハナダイの写

真が載せられている。本種の学名および形態についての報告はない。最近伊豆大島近海の水深 50 m 付近で本種の雌雄各 1 尾、およびトンガ海嶺水域の水深 150 m~157 m から 1 尾漁獲された。調査の結果、本種はイトヒキハナダイ属の新種であることがわかった。背鰭の第 1 棘や腹鰭軟条が著しく延長していない

こと、および色彩などでイトヒキハナダイと区別され、*Tosanoides flavofasciatus* として記載した。